

CLAIMS:

1. A high-frequency system for an MR apparatus with a high-frequency coil arrangement comprising a plurality of resonator elements (104), which coil arrangement is coupled to a transmit unit (106), where a respective transmit channel (1-8) of the transmit unit (106) is assigned to the resonator elements (104),

5 characterized in that the transmit unit (106) comprises with a plurality of high-frequency amplifiers (107), the inputs of which can receive low-power transmit signals via a first controllable multiplexer/distributor network (108), in which the output signals of the high-frequency amplifiers (107) can be distributed over the transmit channels (1-8) via a second controllable multiplexer/distributor network (109).

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2. A high-frequency system as claimed in claim 1, characterized by a control unit (110) assigned to the transmit unit (106) for activating the multiplexer/distributor networks (108, 109).

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3. A high-frequency system as claimed in claim 2, characterized in that the gain factor of each high-frequency amplifier (107) of the transmit unit (106) can be controlled via the control unit (110).

4. A high-frequency system as claimed in claim 3, characterized by measurement
20 sensors (111), coupled to the control unit (110), which serve for determining the high-frequency field strength generated by means of the individual resonator elements (104).

5. A high-frequency system as claimed in any one of claims 1 to 4, characterized by a plurality of controllable high-frequency signal generators (113) for generating the low-
25 power transmit signals.

6. A high-frequency system as claimed in any one of claims 1 to 5, characterized in that the amplitudes and phases of the high-frequency signals supplied to the resonator elements (104) via the transmit channels (1-8) are individually preselectable.

7. A high-frequency system as claimed in any one of claims 1 to 6, characterized by a receive unit (116) with a plurality of receive channels (a-j) assigned to the respective resonator elements (104).

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8. A high-frequency system as claimed in any one of claims 1 to 7, characterized by isolators (124), these being connected between the outputs of the high-frequency amplifiers (107) and the corresponding inputs of the second controllable multiplexer/distributor network (109) and/or between the outputs of the second controllable
10 multiplexer/distributor network (109) and the corresponding resonator elements (104) of the high-frequency coil arrangement.

9. An MR apparatus with a main field coil for generating a homogeneous, static magnetic field in an examination volume (100), a number of gradient coils (103) for
15 generating magnetic field gradients in the examination volume (100), a high-frequency system for generating high-frequency fields in the examination volume (100) and for acquiring MR signals from the examination volume (100), and with a central control unit (122) for activating the gradient coils (103) and the high-frequency system, and a reconstruction and display unit (120, 121) for processing and displaying the MR signals,
20 characterized in that the design of the high-frequency system is as claimed in any one of claims 1 to 8.